HABITABILITY SLEEP ACCOMMODATIONS

PRESENTATION TO

SPACE STATION TASK FORCE

1 MARCH 1984

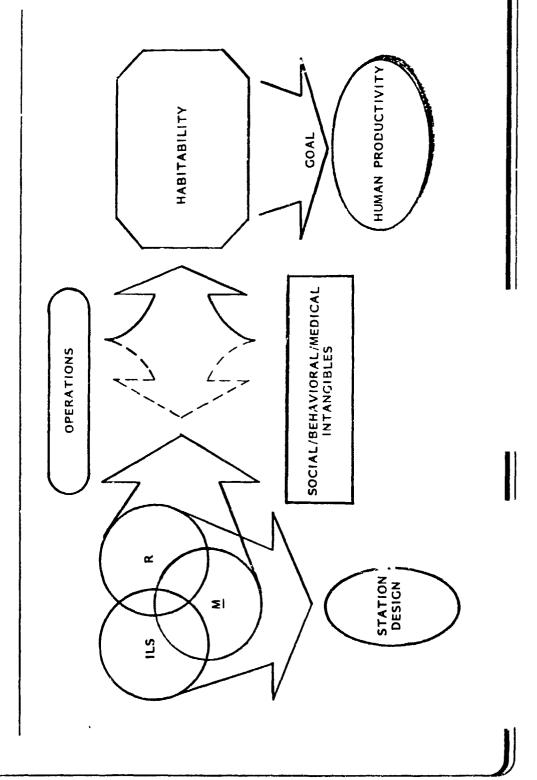
H. T. FISHER, SUPERVISOR



SELECTED STATION INFLUENCING FACTORS

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WARDROOM - GENERAL REQUIREMENTS

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A. SLEEPING ACCOMMODATIONS

B. REST PLACE

C. ENTERTAINMENT EXTENSION

D. DRESSING AREA

E. PERSONAL ITEM STOWAGE

F. BODY RESTRAINT OPTION

G. COMMUNICATIONS

H. TOTAL PRIVACY

. EXTERNAL VIEWING

1. GROOMING PROVISIONS

K. WRITING WORK AREA

L. SOUND ISOLATION

WARDROOM HABITABILITY GENERIC FUNCTIONS ORIGINAL PAGE IS OF POOR QUALITY

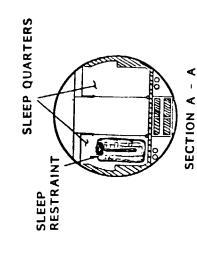
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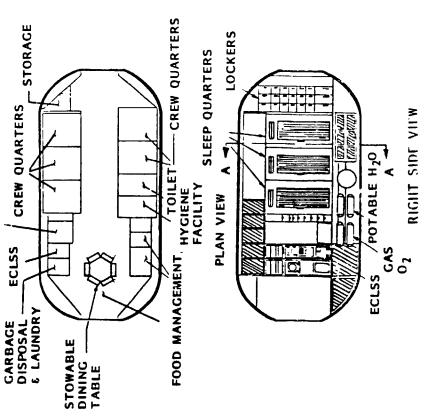
SLEEP QUARTERS CONCEPT A

CREW QUARTERS

ECLSS

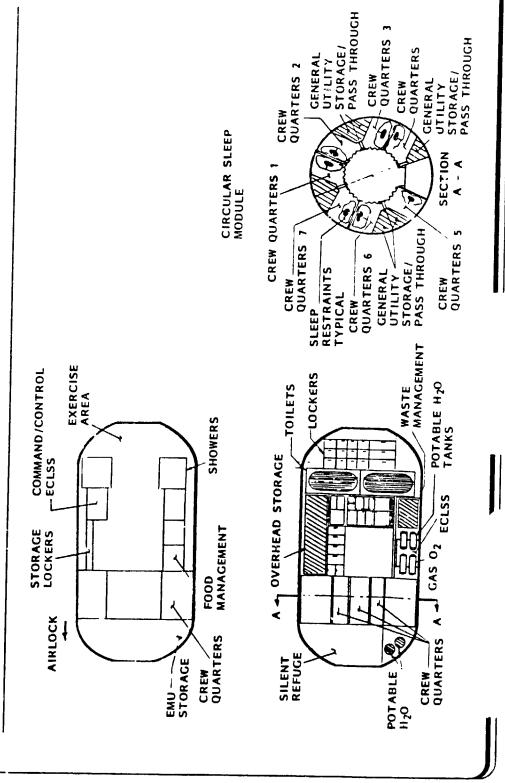
SHOWER





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SLEEP QUARTERS CONCEPT B

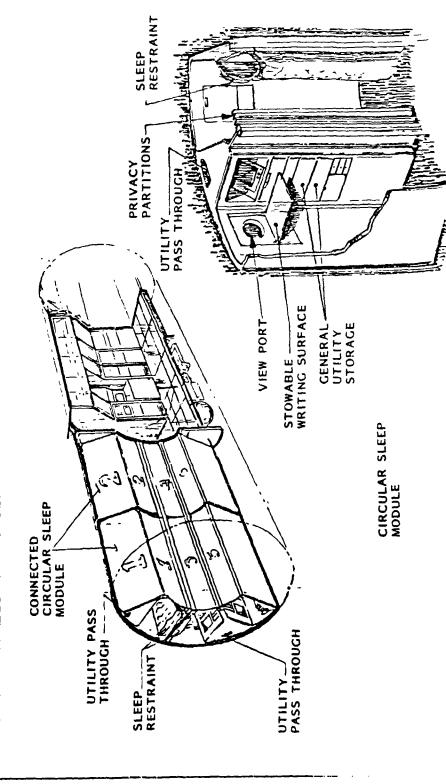


4-189

42 - 5.2° 2'

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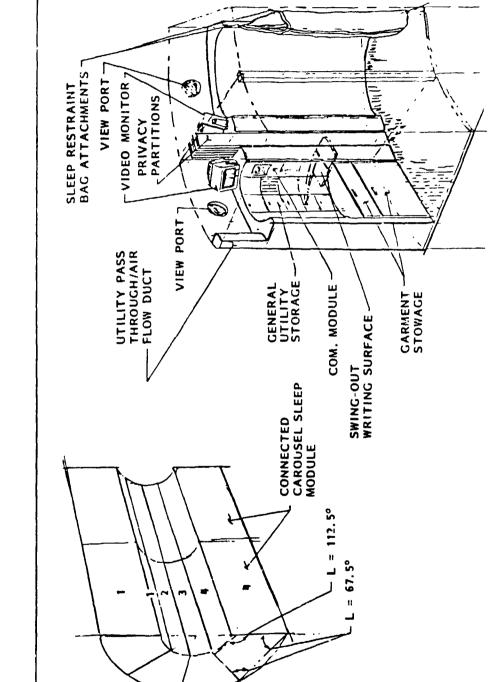
SLEEP QUAPTERS CONCEPT



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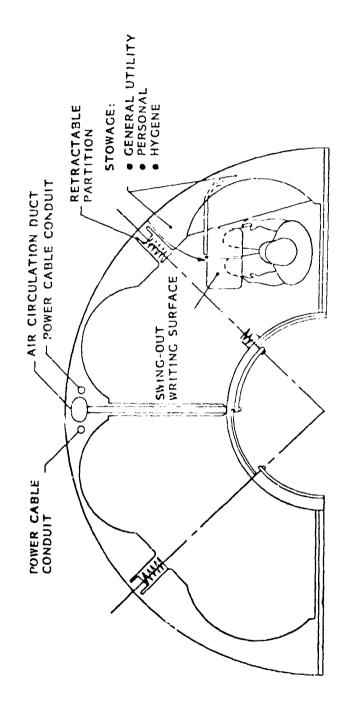
SLEEP RESTRAINT BAG ATTACHMENTS - VIDEO MONITOR 7 VIEW PORT PRIVACY PARTITIONS SLEEP COMPARTMENT—BUNK AREA DETAILS VIEW PORT 7 UTILITY PASS THROUGH/AIR - FLOW DUCT COM. MODULE ~ GENERAL UTILITY STORAGE -SWING-OUT WRITING SURFACE / CONNECTED
CAROUSEL SLEEP
MODULE $L = 112.5^{\circ}$ = 67.5°



4-191

SLEEP BUNK—PLAN VIEW

Man Market Comment

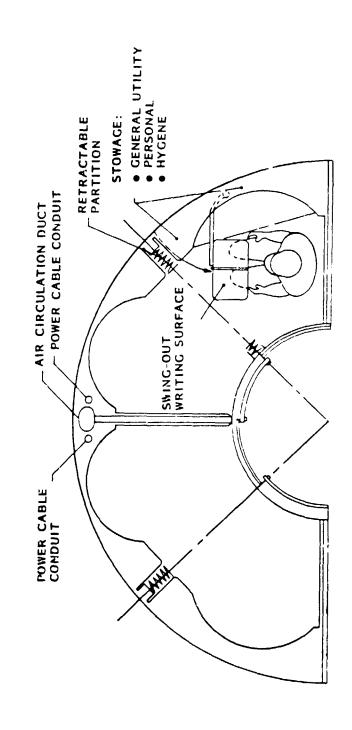




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SLEEP BUNK—PLAN VIEW

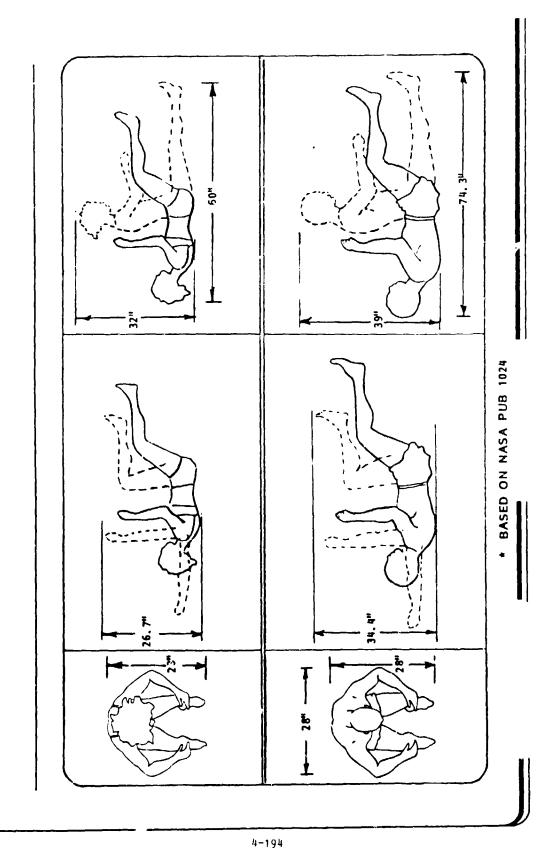
S. J. K.



4--193

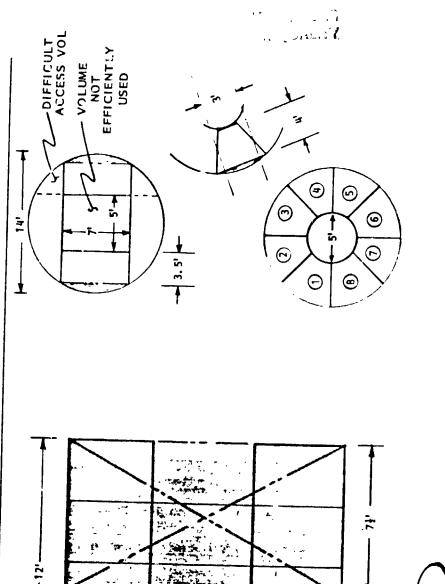


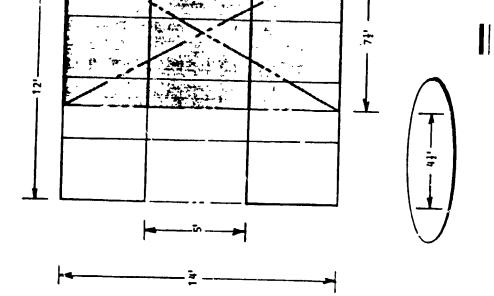
SLEEP/REST VOLUMETRIC FOR 5th TO 95th%tile FEMALES/MALES



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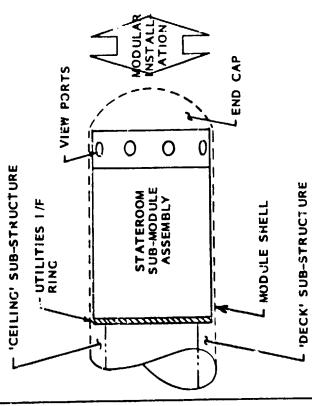




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WARDROOM SUB-MODULE - "MODULARITY"

1. T. J. L. K.



- A. WARDROOM IS SUB-MODULE ASSEMBLY
- ASSEMBLY IS STAND-ALONE UNIT
- . PERMITS PARALLEL MFG
- FLEXIBILITY IN SCHED, INSTALLATION
- ASSEMBLY IS SIMPLE B, RREL CONFIGURATION ပ
- EIGHT (8) SEGMENTS
- INDIVIDUAL SEGMENT MANUFACTURING
- UTILITIES 1/F RING

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- SIMPLE I /F TO UTILITIES
- 360° POTENTIAL I/F TO RING
- RING ACCEPTS:
- ECLSS PLENUM DUCTING (LOOP)

- SIGNAL/DATA LINES (IN/OUT)

- POWER CABLES
- STAND-ALONE UNIT BOLTS ON
- . INDIVIDUAL MANUFACTURING

TOP TOP-TIER ADVANTAGES OF THE SARA'CONCEPT

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- OVER 100 CU FT PER CREWPERSON
- HORIZONTAL (EARTH-LIKE) SLEEP/REST ACCOMMODATIONS
- SINGLE WARDROOM CAN OPEN TO ADJACENT WARDROOM
 - DOUBLES 'OPEN AREA'
- ADJACENT WARDROOM ALWAYS VACANT ASSUMING: 2 OR 3 SHIFT OPS OR
- LESS THAN 8 CREW (e.g., 4)
- PERMITS 2 PEOPLE TO FACE ONE-ANOTHER IF OTHER WARDROOM TEMPORARILY USED
- ADDED 'OPEN AREA' FURTHER AVAILABLE AS EACH WARDROOM FACES:
 - OPEN CORRIDOR 60 IN DIAMETER

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- CPPOSITE WARDROOM (NOT BEING USED) OPEN AREA
- WARDROOM SUB-ASSEMBLY (8 WARDROOMS) ONLY 91 IN LONG (OVERALL) ш.
 - SEVEN (7) FT. INTERNAL
- ONE (1) IN. END PLATES + INSULATION
- FOUR (4) IN. FOR UTILITIES I/F RING
- SIMPLIFIED SUB-ASSEMBLY MODULAR CONCEPT u.
- FABRICATION
- INSTALLATION
- PORTHOLES ARE ALL IN ONE NARROW CIRCUMFERENTIAL 'RING SEGMENT' STRUCTURAL **ADVANTAGE** ပ
- LESS LENGTH USED (X AXIS) THAN VERTICAL 'BUNKS' Ŧ.
 - SAVES 20% OF SHORT MODULE LENGTH!
- SLEEP AND REST ACCOMMODATIONS

- 10 to 10

DESIGN OF CONFINED ENVIRONMENTS

PRES_NTATION MADE AT AMES RESEARCH CENTER MOFFIT FIELD, CALIFORNIA

MARCH 1, 1984

- DESIGN VOCABULARY AND HISTORY
 - A. THE REPETITION OF FORMS IN RELATIONSHIP TO LAND DASED STRUCTURES AND SPACE BOUND OBJECTS
 - B. THE COMPOSITION OF SHELTER AND ITS QUALITIES IN REGARD TO HUMAN NEEDS
- II. PROTOTYPE FOR EXPERIMENTATION OF LIVING/HOME ENVIRONMENT
 - A. DESIGN PHILOSOPHY
 - 1.DETERMINING BASIC HABITABILITY NEEDS
 - 2.CREATING A FORM THAT RETAINS THE BASIC NEEDS WITHIN A STRUCTURE THAT UTILIZES CURRENT TECHNOLOGY
 - A. DESIGN CONCEPT FLOOR PLANE
 - 1.MODULES AND THEIR ABILITIES TO REVEAL, CONCEAL OR TRANSFORM TO MEET THE NEEDS OF HABITABILITY
 - 2.ELECTRONICS AND THEIR CAPACITY TO MANIPULATE THE ENVIRONMENT TO THE FUNCTIONS AND THE COMFORTS OF THE USER
- III.PROTOTYPE FOR EXPERIMENTATION OF WORK/OFFICE ENVIRONMENT

PROJECT RETAINS DESIGN PHILOSOPHY AND SYSTEMS AS DESCRIBED ABOVE AND EXPANDS TO ENCOMPASS FUNCTIONALITY OF EXECUTIVE RESPONSIBILITIES IN REGARD TO COMMUNICATIONS, CONFERENCE, ACCESS TO INFORMATION AND CREATIVE PRODUCTION.

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